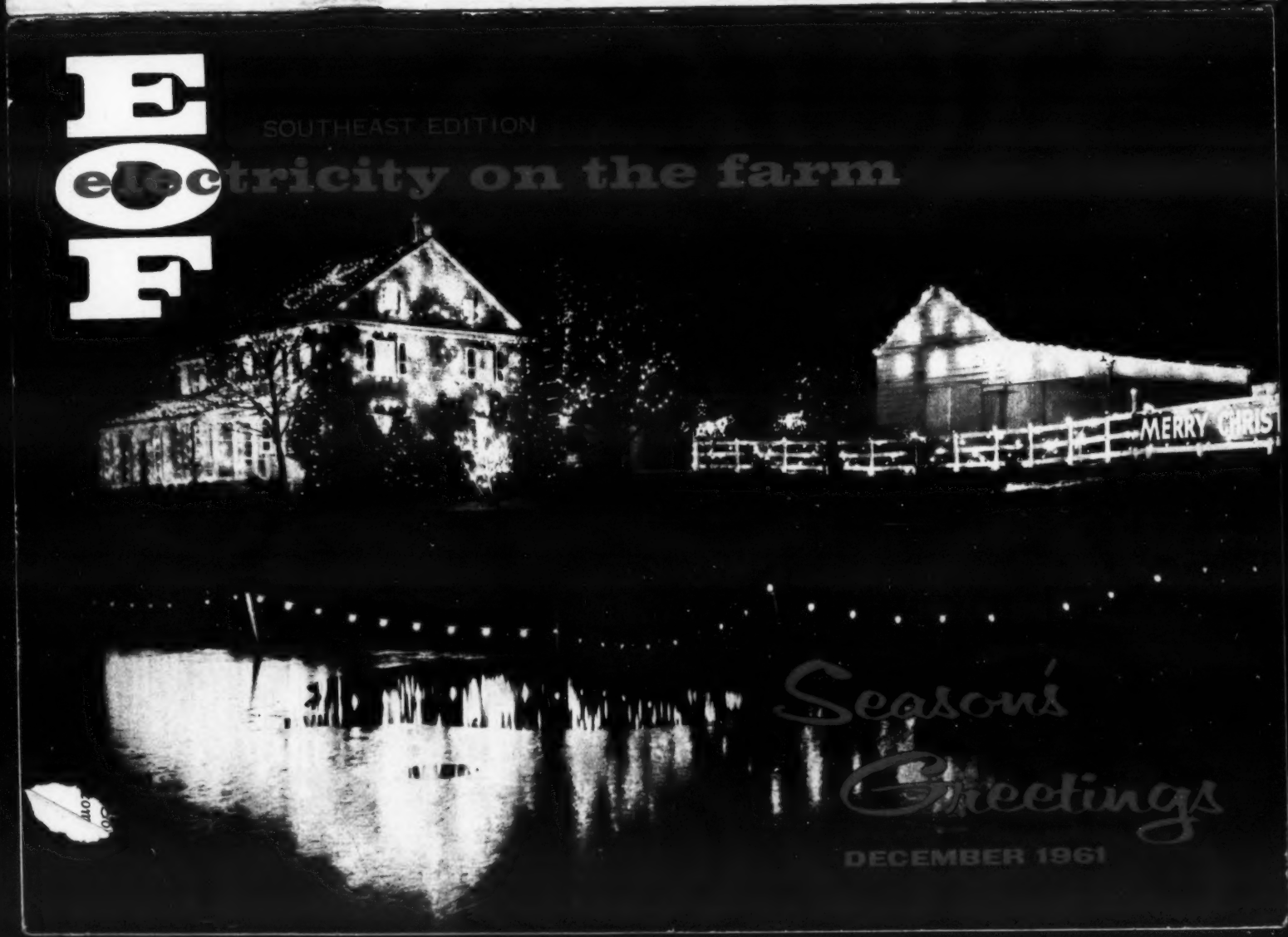
FOE
SOUTHEAST EDITION
electricity on the farm
MERRY CHRIS
Season's Greetings
DECEMBER 1961

INFORMATION SERVICE

For the Readers of this Magazine

All-Electric Farming enables you to

• Save time • Reduce labor requirements • Increase production capacity • Let electric servants do heavy, disagreeable tasks • Have all the benefits of modern, total electric living

YES, there are standards for recognition as an All-Electric Farm. They may vary with the region and the type of farming, but you can be sure they point the way to your better farming future! The checklist below will help you measure your progress and plan ahead.

Primary and Optional Standards For All-Electric Farm Recognition

- ☐ Housepower Wiring
- ☐ Farmpower Wiring
- ☐ Materials Handling
  - ☐ Barn Cleaners
  - ☐ Poultry house cleaners
  - ☐ Bulk feeders
  - ☐ Egg collectors
  - ☐ Bulk feed & crop handling equipment
  - ☐ Silo unloaders
  - ☐ Pipe line milkers
  - ☐ Other conveying equipment
- ☐ Ventilation
- ☐ Outdoor farm buildings: barn, poultry house
- ☐ Egg processing equipment
- ☐ Farm shops
- ☐ Farm refrigeration
- ☐ Space & comfort heating
- ☐ Water heating
- ☐ Lighting
- ☐ Communications Equipment
- ☐ Feed processing
- ☐ Automatic water systems
- ☐ Egg coolers
- ☐ Freezeproofing
- ☐ Irrigation
- ☐ Brooding
- ☐ Water warmers for livestock
- ☐ Hay & crop dryers
- ☐ Soil heating
- ☐ Cooking
- ☐ Refrigeration
- ☐ Laundry
- ☐ Dishwashing
- ☐ Air conditioning

Our Information Service—Our Editors will be glad to assist you by answering your questions or supplying further information about electrically-powered equipment or appliances for farm and home. Just fill out and mail the blank below or write us a letter. If you would prefer, direct your question to the nearest office of your local electric power supplier.

And if you would like to have a voice in deciding what you and your family will find in future issues of ELECTRICITY ON THE FARM, just check on the standards list the subjects which interest you the most and return it to us.

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ELECTRICITY ON THE FARM

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SOUTHEAST EDITION

electricity on the farm

VOL. 34, NO. 10 DECEMBER 1961

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Do-It-Yourself?

Farmers, probably more than any other group of workers, excel in "do-it-yourself" projects. They rely on themselves, by the very nature of their operation, to get things done.

Up to a point, this is an admirable trait. But farming has grown into a very complex business. Changes have been gradual, but there has been a steady, forward development which has made present-day farming far more complicated than it was a generation or two ago.

When a farmer goes beyond his abilities in mechanical "do-it-yourself" jobs he becomes inefficient. But far greater are the dangers of the "do-it-yourself" attitude when he uses only his own judgment in matters where he really needs the help of professional experts such as lawyers, bankers, consultant engineers, etc. Details in the fields in which these men specialize were once relatively simple insofar as their relation to farming was concerned. This is no longer true.

A trip to town to seek this professional help may seem inconvenient at the time. And the advice may cost money. But the total cost will usually be quite small in comparison to the financial loss that can result from a wrong guess by the "do-it-yourself" operator.

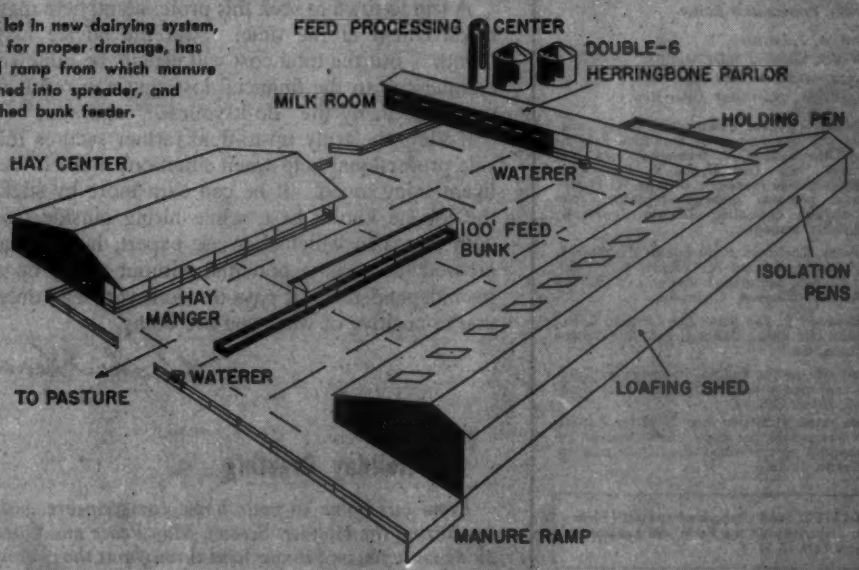
Today, the truly up-to-date farmer secures this outside professional help when situations make it the intelligent thing to do. If he can earn more by sticking to the job he knows best, while hiring outsiders to help with things in which they are expert, he will have increased his earning potential without giving up any of his independence. It pays to "do it yourself" only when you're positive of what you are doing.

Hugh Hansen

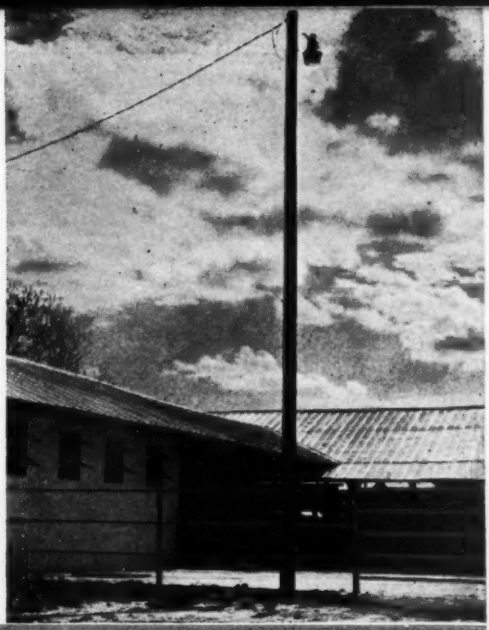
Our Holiday Greeting

From our home to your home come sincere wishes for joy during the Holiday Season. May Peace and Good Will abide with you and in our land throughout the coming year.

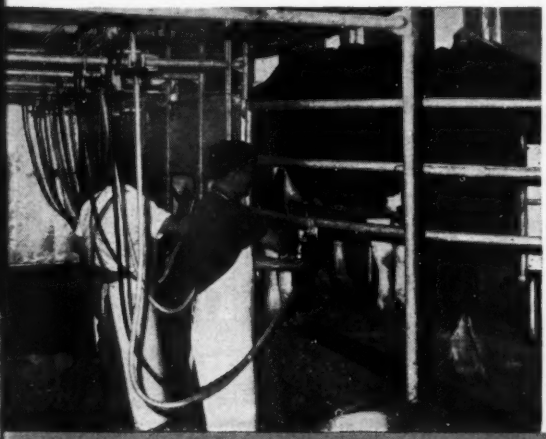
Paved lot in new dairying system, sloped for proper drainage, has special ramp from which manure is pushed into spreader, and unfinished bunk feeder.



7000-lumen mercury-vapor lamp lights entire dairy lot area.



Milking 75 Holsteins in double-6 herringbone requires less than two hours, including clean-up. Crouch expects to increase herd to 100-125.



By ALBERT MORRIS, JR.

For South Carolina farmer . . .

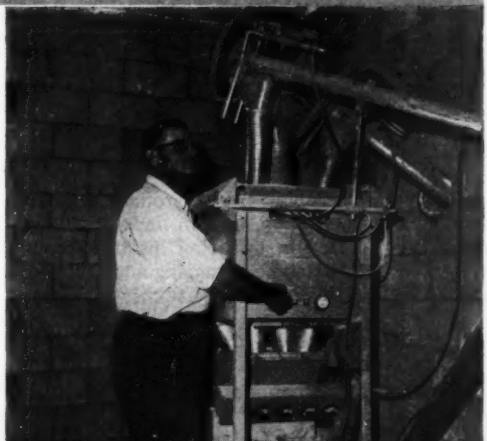
New Dairy System Proves Itself

A new dairying unit using a loose-housing system designed to take care of 100-125 cows was put into use a few months ago by Edwin C. Crouch of Batesburg, South Carolina. He liked it from the start—so well, in fact, that after a few weeks he was planning to build a duplicate unit for a second herd.

"Man-and-a-Half" Parlor

His enthusiasm for the new system stems from several things, but most of it traces back to labor-saving features and the ease with which cows can be handled. He regards the initial unit with its double-six herringbone milking parlor as a "man-and-a-half" unit, so-called because a tenant and teen-age son can operate it efficiently.

Feed processing and handling is mechanized entirely. Grain is kept in two 1330-bushel bins which have a fan for natural-air drying or aeration. Supplement is stored in a 6-ton bin. These feed ingredients are augered directly from storage to the 2 hp mixer-grinder, and the processed feed is held in a small hopper. A bin-level switch in this



Use of bin-level switches with 2 hp mixer-grinder completely mechanizes feed processing. Operator has only to throw master switch or set timer.

Grain and supplement for dairy ration are stored in bins next to feed room. Bins have fan for natural-air drying or aeration of grain.

hopper activates the whole processing operation to keep a supply of feed ready.

In addition to having freshly-ground feed for his cows at each milking, Crouch finds that he is saving $10-12 per ton by doing his own processing. For this reason he is bagging a ton of feed per day and hauling it to cows at other locations.

Feeds Silage, Green Chop Year-Round

The new lot has a 100-foot bunk feeder for distributing green chop or silage. Crouch uses trench silos, aims to feed either green chop or silage the year-round. The paved lot speeds and simplifies manure handling. Waste is moved with the blade on a tractor and pushed from a specially-designed ramp into the manure spreader. Elimination of mud and bogs in the lot area also protects cows from foot rot and mastitis.

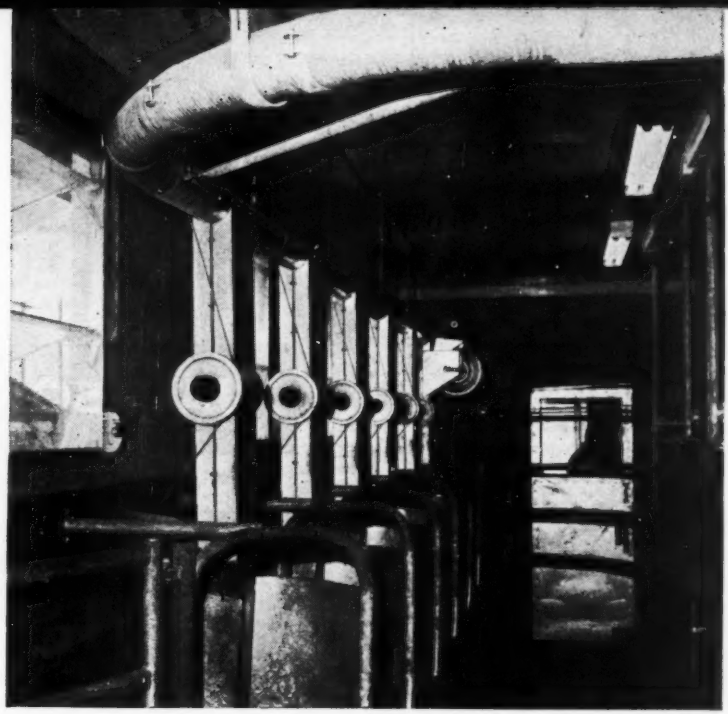
There is one change Crouch expects to make. He will move the hay mangers forward to keep the manure drops on concrete. As originally located, the mangers were set back about 10 feet from the pavement.

The giant hay center stores hay beside the mangers for quick, easy feeding and also serves Crouch as an equipment shelter.

Cows Easily Examined, Treated

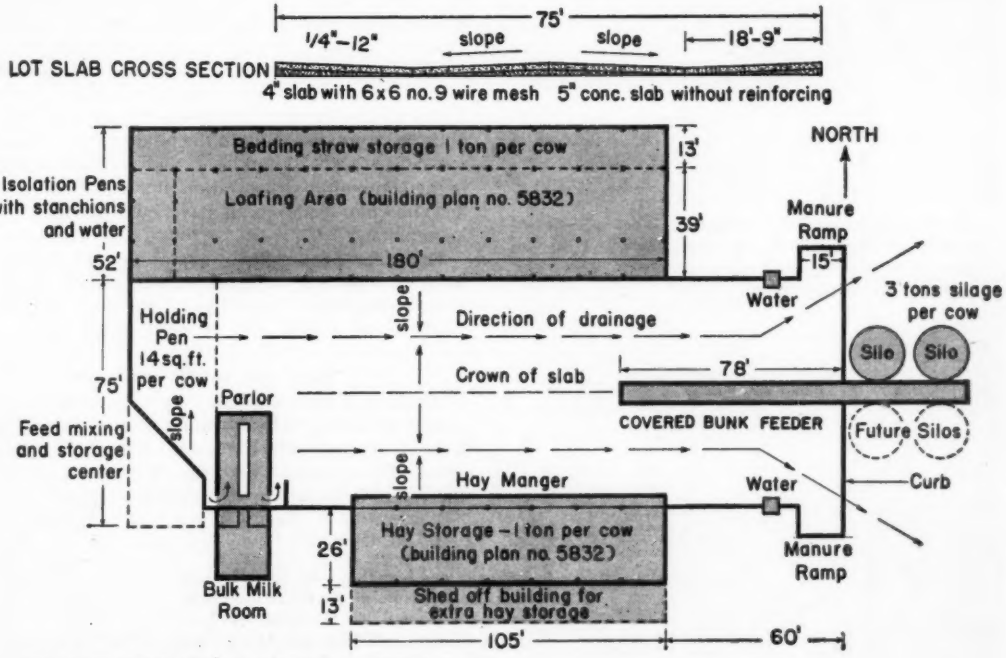
This system is designed to make it easy to cut individual animals out of the herd from the holding pen or after milking, and hold them in isolation pens for examination or treatment.

When he builds the new dairy unit for his second herd, Crouch expects to use a double-8 herringbone. It will replace two 4-stall walk-through parlors and cut his labor needs by one man while stepping up his capacity and efficiency. □□



Continuous auger driven by 1 hp motor delivers feed to 12 downspouts. Flexible sections of auger and tubing are used to make turns at end of herringbone parlor.

Plan for 100-cow dairy housing system, below, was prepared by Frank Hedden, Extension Agricultural Engineer at Clemson College. It is very similar to plan used by Crouch.

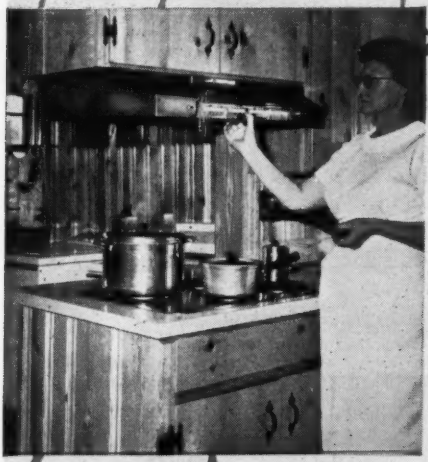


100 COW HERD DAIRY HOUSING SYSTEM

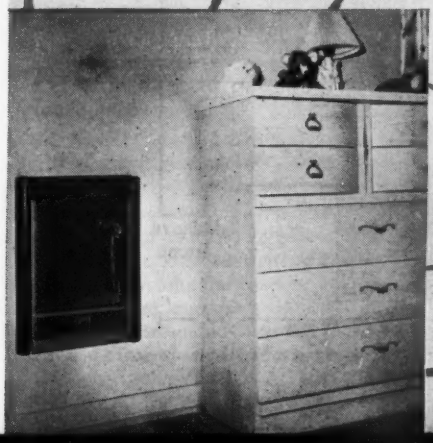
Community pride and group action combined to provide a

NEW LOOK FOR JACKSON'S GAP

New family room in R. W. Claybrook residence has wall-insert electric heater with thermostat control. Families in Jackson's Gap have made wide use of this type of electric heating in remodeled areas.



Remodeled kitchen in the R. S. Banks home is designed for efficiency, comfort and beauty. Built-in venting hood over range surface units helps keep house clean and odor free.



In bedrooms and bath that were added by conversion of old back porch, the Banks' used wall-insert electric heaters like this 2000-watt unit. Rooms are for their children, and they like the safety and convenience of electric heating.

Residents of Jackson's Gap in Alabama's Tallapoosa County tell you that theirs once was a sleepy little Southern town. Now, they claim, it's a live-wire, wide-awake settlement. The change, they say, is due largely to their own efforts in a community improvement organization they formed in 1951.

Whatever the reason, here is a community that has been busy adjusting and developing, its people sitting down together to pinpoint their problems and map solutions. Within the boundaries of Jackson's Gap are 120 families. Only 42 are active in the community organization, but President Walter Dreschler believes all have been touched by its activities.

Dreschler personally is a part of the change. Born in Holland, he came to the United States after World War II, and has settled down to own and operate "Hollandia," a small dairy farm.

Sponsored by Kiwanis

The community organization is sponsored by the nearby Dadeville Kiwanis Club and looks to the County Agricultural Extension Agent for guidance. Taking stock last year, here are some of the things it found about Jackson's Gap:

Ceiling cable used in 4-year-old home of J. C. Pritchard made him one of the Gap's earliest users of electric home heating.

Of its 120 families, 80 have off-farm income estimated at $480,000 per year. Many of the jobs are in textile mills in nearby cities.

Woodlands are the big money-producer within the community. Landowners received $109,600 for forest products sold; there was a payroll of $117,000 for harvesting the timber. As a partial replacement of trees that were cut, 80,000 seedlings were planted.

Farmers grossed $57,000 from dairying, $33,000 from beef cattle. Row crops are almost gone—less than 200 acres was in in corn and cotton.

27 New Homes

If these dollar figures indicate that the economy of Jackson's Gap is healthy, the physical improvements seem to underscore the fact. Twenty-seven new homes were built in the community last year, 17 existing homes were remodeled at an average cost of almost $2000, and six other homes were rewired to provide adequate electrical service for new appliances. Electric heating has become the popular choice for new and remodeled homes, and the community's only church has moved into a new building equipped with an electric heat pump to provide conditioned air the year-round.

J. C. Pritchard was one of the community's pioneers where electric heating is concerned. He put ceiling cable into a new home he built four years ago. Last year when the R. S. Banks decided to remodel a frame house that has stood since 1901, they began by converting a porch that extended the full width of the back of the house into a laundry center, bath and two bedrooms. To insulate the old walls they used blown insulation, and they installed wall-insert heaters in each of the new rooms. Their kitchen also got a face-lifting as it was rearranged and built-ins added. The Pritchards and the Banks typify a community of people seeking greater comfort and convenience in their everyday living.

Town Is Brightly Lighted

Individuals and stores have contracted for 7000-lumen mercury vapor lamps that provide dusk-to-dawn protective lighting, making the heart of the community look like a well-lighted suburb. And 20 families last year added ornamental post lamps.

The paved road through the Gap has taken on a new appearance. Ragged fences have been straightened, bushes uprooted, eroded banks smoothed and sodded in hay crops. Behind these visible changes is the driving force of community pride. Like many another rural community, citizens of the Gap are concerned about making it attractive for their young people and providing economic opportunities for them. With its diversity of income, its payroll from industry to balance farm income, Jackson's Gap already has what thousands of communities put at the top of their want list. But its people are not slowing down . . . they want a still brighter face for their community. □□

Twenty families in the Gap last year installed ornamental post lanterns to light walkways.

Battery-Powered Carts

Sprawling Cypress Gardens Egg Farm has five miles of cages.

It's a long way to the far end of the shed. Carts which carry up to 2880 eggs save many steps and speed egg collection. Eggs are delivered directly into 45° storage room for pre-cooling. Schedule is four egg collections per day.

Versatile chore-hands for caged laying flock

CYPRESS GARDENS Egg Farm, near Lake Wales, Florida, is home for 63,000 layers, housed two birds in a cage beneath 20 parallel sheds, each 660 feet long. There are two rows of cages beneath each shed, which means that if all the cages were placed end-to-end they would reach five miles.

This distance does not trouble Jim Fortner or his employees. They ride six battery-powered carts to collect eggs, spray litter and deliver feed. Nor do the quiet, easy-to-operate carts disturb the hens, which at peak production lay about 50,000 eggs per day. Each cart uses four conventional storage batteries. Refueling is accomplished by making a simple electrical connection, throwing a switch, and leaving the batteries to be charged overnight.

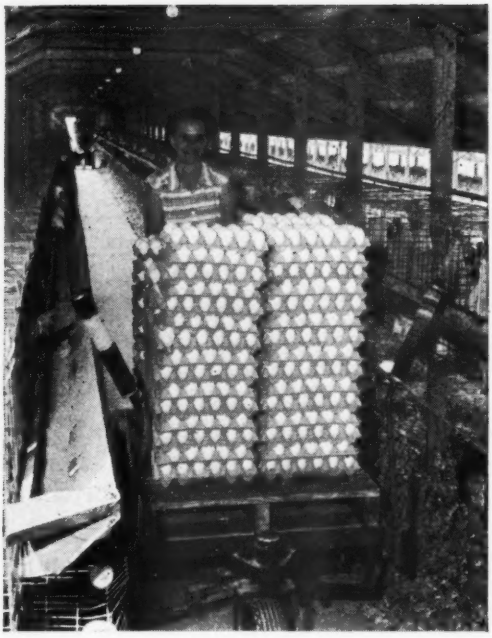
The sheds stretch out at a 90° angle from a sheltered concrete runway that connects them and leads to the egg processing center. □□

Identical cart, equipped for feeding, makes 660-ft. round-trip in just under three minutes, feeding 3140 hens.

Spraying litter is another job carts can do. Pipes extend from sides of 55-gal. drum to spray both rows in one trip.

BATTERY-POWERED CARTS . . . *(continued)*

Overnight, or at other times when carts are not in use, their storage batteries are charged by making simple electrical connection and throwing switch. It's an easy way to refuel.



Between the two rows of cages in each shed is a 32-inch concrete runway for battery-powered carts. Arms that touch feed troughs on either side guide the cart, leaving operator free to use both hands for egg collection.

Birds peck for their water, get it a drop at a time. There are no troughs to clean or spill over.

No Icy Water for these Hens!

Insulated cover with electric heating cable clips on suspended trough to keep continuous, acceptably warm supply of drinking water for breeding flock.

Control unit for 120-foot waterer assembly has thermostat, signal light and a receptacle for heating tape that protects water supply pipe.

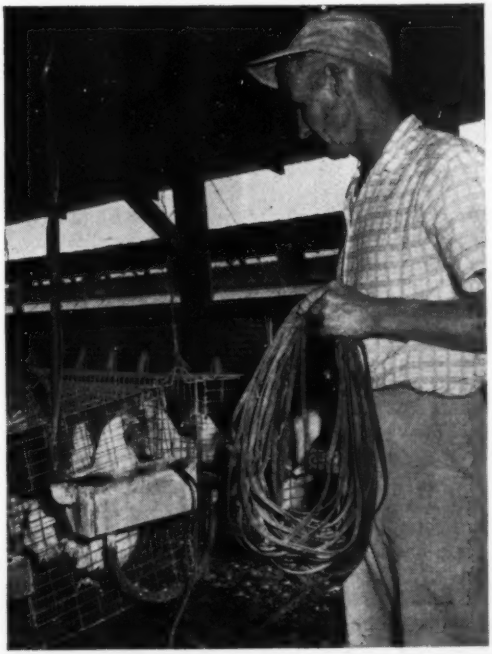
Here are methods used by two poultrymen to prevent icing and keep an acceptable supply of drinking water for laying flocks.

For suspended troughs that serve 25,000 breeding hens at Hubbard Poultry Farm near Statesville, North Carolina, the method is a clip-on cover which fits the underside of the trough, has ½ inch of insulation, and uses an electric heating cable. One control, with thermostat and signal light, serves as many as twelve 10-ft. sections.

Says farm foreman H. W. Scheld: "Before we used the heaters, water in troughs froze solid. Since lights come on at 2 a.m., hens could be without water for hours before we would know anything about it."

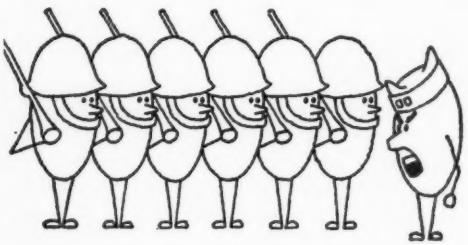
Raleigh Rose uses shallow V-shaped troughs to supply water for 10,000 caged layers at Woodland, North Carolina. He avoids freeze-ups by laying conventional heating tapes in troughs. The 60-ft.-long, 300-watt tapes are controlled by a thermostat set at 40°. To prevent damage to tapes, Rose suggests plugging them into a receptacle before handling.

What difference has water-warming made with his layers? He says that during the winter before he installed the tapes, he was aggravated with repeated freezing and spent just over $500 for poultry medications. First winter he used tapes, he was spared the aggravation of freezing and paid only $98 for medications. □□



Conventional 5-watt-per-foot heating tapes are placed into shallow V-shaped troughs that serve caged layers in Rose flock. Tapes of this type are available in various lengths.

When it comes to eggs...



G. I.'s GET THE BEST THERE IS

Texas producer puts perfection into every egg he processes

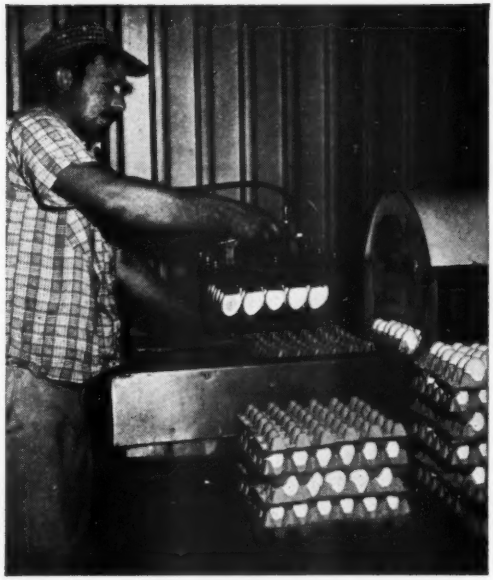
One crusty army officer gruffly calls McMurry's eggs "the best in the country." They are, at least, as nearly flawless in quality as you'll find.

Bill McMurry's eggs come from 87,000 hens in conventional houses scattered around Seagraves, Texas. On a smaller scale, a lot of egg producers use about the same standards of feeding and production as the McMurry flocks get. The difference is in the strict "quality control" McMurry's eggs get on their trip through his processing house near Seagraves. Every one of the approximately 60,000 eggs sold daily goes into a retail carton—and McMurry is mighty particular about what goes into those cartons.

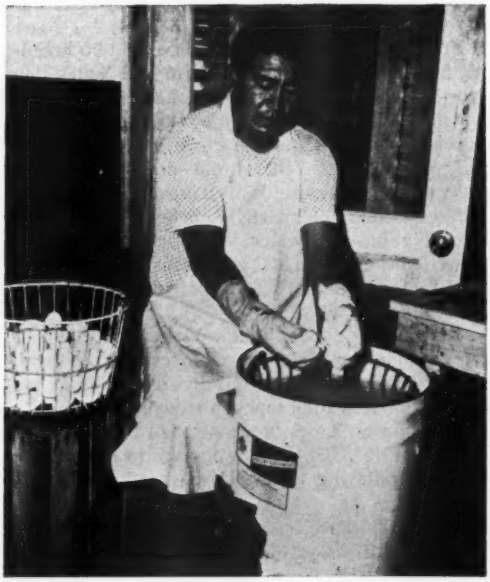
He has to be, for one of his big customers is the "PX" (commissary) on a Texas military base. Its inspectors are so finicky about the eggs they buy that hardly any egg marketers try to sell there. McMurry does.

Most of McMurry's eggs are also sold through supermarkets in nearby cities and other civilian

(*Continued on page* 16)



Just-gathered eggs brought into the McMurry processing house are transferred from cardboard flats (foreground) into plastic flats for trip through egg washer. Vacuum lifter used by this worker transfers 30 eggs at a time from flat to flat.



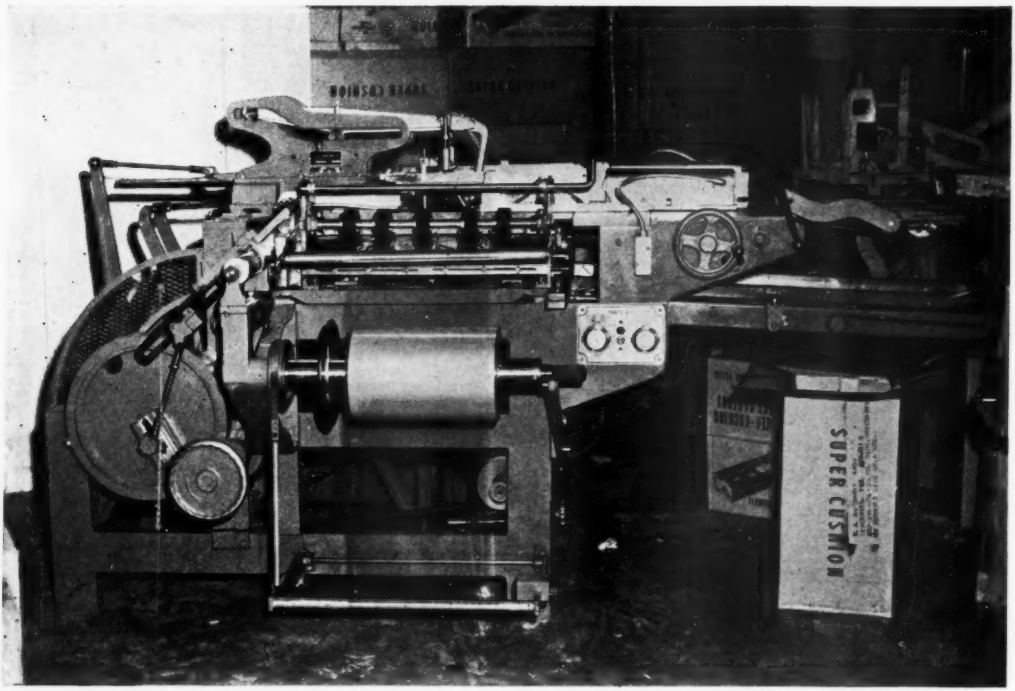
Eggs with stubborn dirt after automatic washing are re-washed the hard way, using this bucket-type washer and manual scrubbing.

Half-horsepower motor powers vacuum lifter. In one year's time, power generated by this motor will have lifted 1300 tons of eggs.

Washed eggs come out of automatic washer here, at the rate of 7200 an hour.

After 24 hours in cooling room, electronic grading machine counts and grades eggs by weight, dropping each grade into its own section. Defective eggs are automatically rejected by machine.

On opposite side of a partition from grading machine, workers give graded eggs an additional inspection for defects and manually pack accepted eggs into cartons. Cartons are carried along continuous conveyor belt, where they are automatically closed.



Closed cartons go onto a revolving circular work table where they are either packed directly into shipping crates or routed through this wrapping machine.

G. I.'s GET THE BEST THERE IS...

(continued)

outlets. But the same rigid "quality control" necessary to satisfy the military post is applied to every carton—including even those for sale under the retailer's own brand. Most of the eggs are sold through supermarkets, etc. in McMurry's own carton—and he wants those customers to have absolute confidence in the brand name. Apparently they do; McMurry reports that the supermarkets buy every egg he can supply.

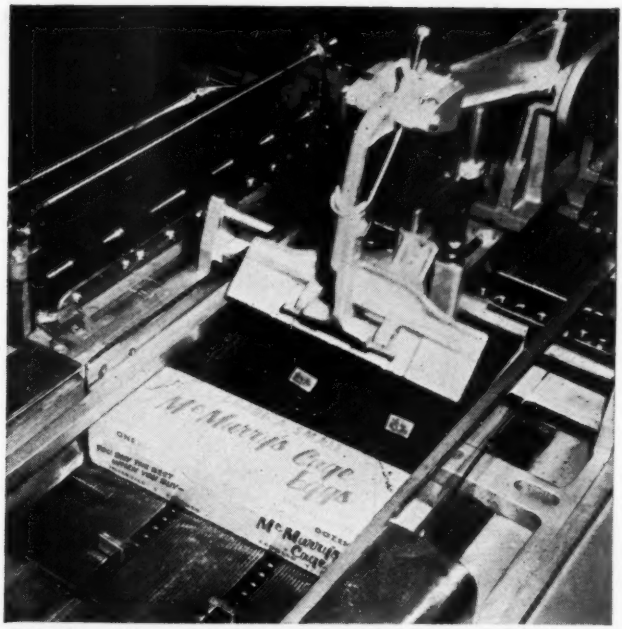
Part of the secret of the "quality control" in McMurry's egg processing house is his insistence that every worker in the house be skilled enough to keep a constant sharp eye peeled during the visual part of the processing operation. A worker who didn't watch for and throw out visibly defective eggs (cracks, dirties, etc.) would likely be thrown out, himself.

Another part of the secret is in attention to such details as washing the eggs soon after they come in from the laying houses—while they're still warm—and before they go into the cooling room (at 40° for 24 hours). Cooling them first, then raising the egg temperature again by washing, would lower the egg quality, McMurry has found.

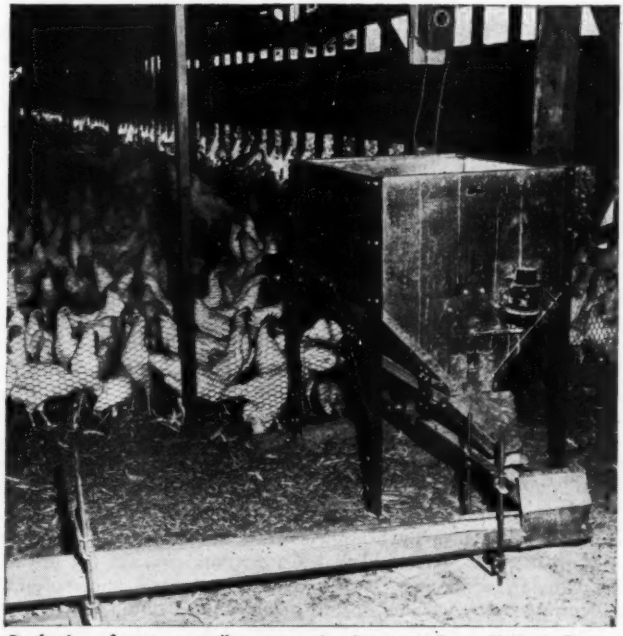
Most unique part of the operation, however, is the electronic egg grader, which also detects and rejects eggs with such defects as blood spots. It replaces the conventional candling equipment—but it's so sensitive that the electronic beam which passes through each egg will detect even the faint pink discoloration of a diffused blood spot.

The machine also does a precision job of individually grading each egg by weight. That's done mechanically; as each egg passes down the conveyor belt from the spot detector it passes over a series of sensitive scales. If it's heavy enough for "Large," it trips the scales and is dropped off into the compartment for "Large," and so on.

Besides accuracy, the equipment guarantees speed and volume. A crew of five can normally turn out the 5000 cartons of eggs in a regular working day—from cooling room to shipping crate. That includes handling the machine which wraps the cartons of McMurry's best-grade eggs—and some of the others—in a sealed cellophane wrapper. Depreciation, operating expenses, etc. for the fully-automatic wrapping machine make it add about 2¢ to the cost of each carton of eggs, but it's the only way to make sure that carton will really be fresh and "flawless" when it reaches the consumer's table. □ □



Wrapping machine automatically wraps and heat-seals cellophane around each carton of top-grade eggs, then returns it to within easy reach of worker doing the crating.



Production of eggs as well as processing is automatic on McMurry Farm. Here is automatic time-controlled mechanical poultry feeder. Feed manufacturing is done by electric feed mill equipment right on the farm, too.

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Here's the answer to your "dead battery" problems . . . an economical Marquette Battery Charger. Look what it will do for you:

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Low cost, 6-12 volt, "Fast Charger". Delivers 40 amps

Model BC 310N
6, 8, 12, 24 volts, 10 amps. This "4-in-1" unit will charge any battery on your farm.

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Marquette has a complete line of both A.C. Arc Welders and oxyacetylene welding equipment. Marquette welders are built for heavy-duty performance . . . yet are priced lower than many so-called "economy" welders. Write for a complete catalog . . . and the name of your nearest Marquette Distributor.

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For Diversified Farmers With Small Dairy Herds

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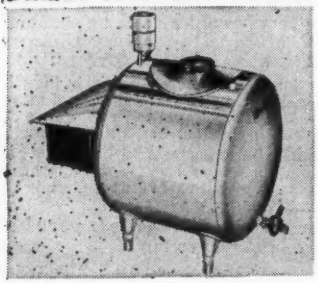

Now the price barrier is broken on farm bulk milk tanks — for the diversified farmer with a small herd. The new, small DUN-CAN-COMPACT BULK MILK COOLER — made by makers of the famous ZERO Tank — gives you the labor-saving, time-saving, higher-milk-quality advantages of bulk operation. Enables you to *make the milk profit you want*, but can't get with a profit-eating can operation. Yet this DUNCAN-COMPACT *costs less than can equipment!*

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BIRTH DEFECTS ARTHRITIS

...SAY YES TO THE NEW MARCH OF DIMES

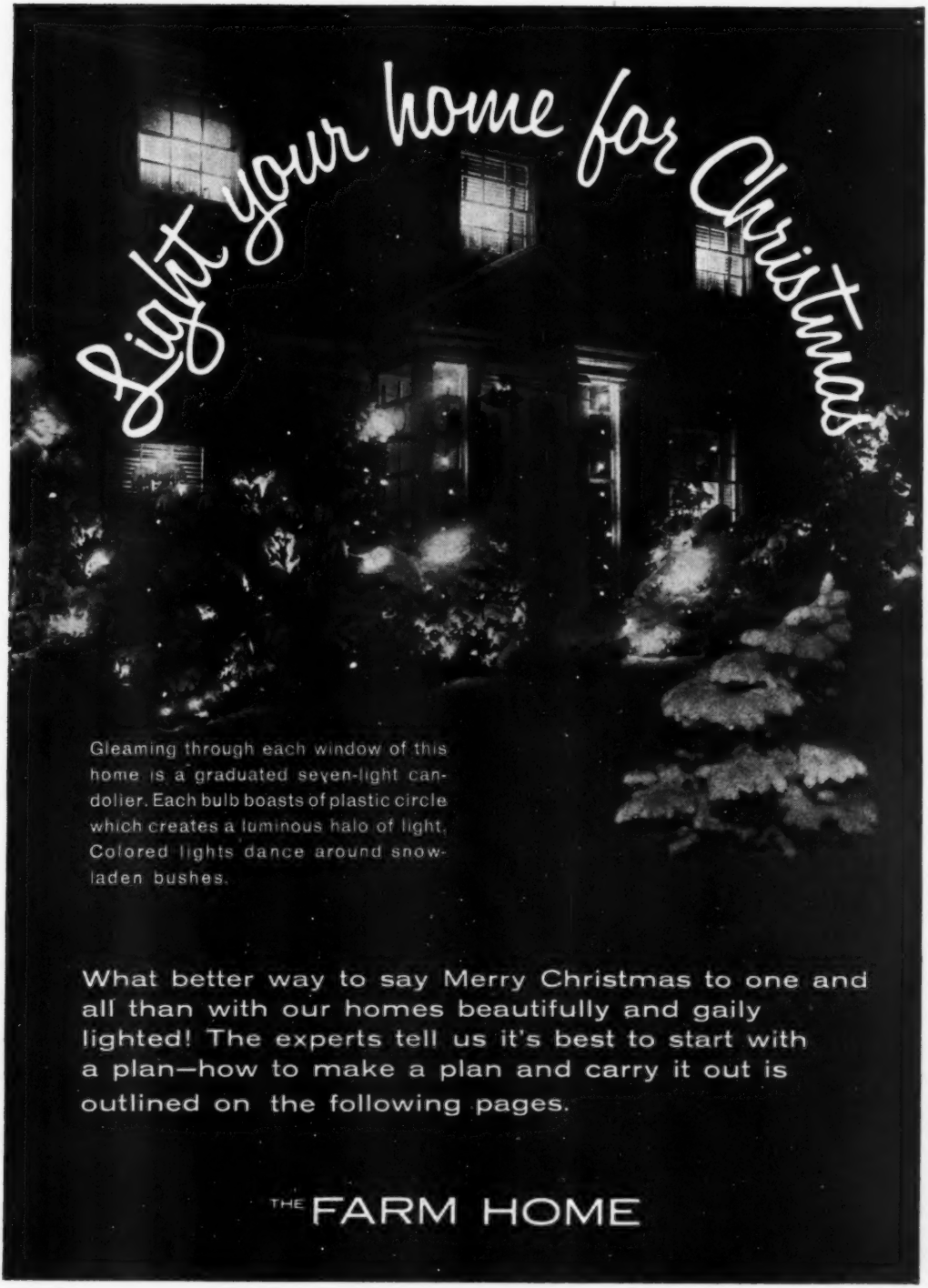
'Who's Afraid of ELECTRIC BLANKETS?'

From time to time we receive inquiries from our readers asking us if electric blankets are safe. Naturally, the simple answer that they are safe isn't enough to satisfy—especially for the more inquiring reader. He wants to know the facts about what makes an electric blanket safe, how it is constructed, and how it operates. This prompted us to give you some information about the "inner workings" of electric blankets.

The basic principle of the electric blanket—that of resistance heating wires in fabric—was developed during World War II. The armed services needed flight suits that would keep men comfortable while flying planes at high altitudes with temperatures of minus-60 to minus-70°. The development of electrically-heated flying suits was the answer. They worked very satisfactorily, and thousands were worn by our military airmen. Specially-designed electric blankets employing the same principle were used to keep wounded airmen comfortable on these same flights.

After the war, manufacturers took their "warmth without weight" techniques used in flying suits and applied them to civilian use. The result was the modern automatic electric bed coverings. Today's electric blanket has several improvements over the original "flying blanket" used for wounded airmen. Notable among them is a unique two-element heating wire shown on page 25, which is used in many blankets. All wires are wound spirally for greater flexibility and longer wire life. The heating wire is wrapped around a central core. A nylon sheath encases the heating wire. This sheath is wound with a signal wire and an insulating jacket covers the entire assembly. The nylon sheath possesses a special electrical

(*continued on page* 25)



Gleaming through each window of this home is a graduated seven-light candolier. Each bulb boasts of plastic circle which creates a luminous halo of light. Colored lights dance around snow-laden bushes.

What better way to say Merry Christmas to one and all than with our homes beautifully and gaily lighted! The experts tell us it's best to start with a plan—how to make a plan and carry it out is outlined on the following pages.

THE FARM HOME

Enjoy making this fantasy tree for entry hall, sideboard, or table.

You'll need:

Wooden bucket or cardboard paint pail
4 ft. pipe or broom stick
plaster of Paris
black enamel paint and silver glitter
3 yards of 2″ silver ribbon
8 silver Christmas balls
1 yard chicken wire
1 string—20 light red or white Poinsettia midget Christmas lights
Evergreen branches

Place pipe in center of bucket, weight with sand or stones; fill with plaster of Paris to hold pipe in place. Paint bucket and pipe black and sprinkle with glitter. Crush chicken wire into a ball 14″ in diameter, place on top of pipe and fasten securely. Stick greens into wire until thickly covered. Decorate with silver Christmas balls and red or white midget Poinsettia lights (or use a multi-colored string of lights). Starting at the bottom, wind ribbon, spiral fashion, around pipe. Shape a large single bow and fasten at top of pipe.

In planning your Christmas lighting, look at your home with an objective eye. Pick out those features of which you are most proud by day and emphasize them so they will be appreciated at night, too.

Decorating the tree can be a pleasure, or a chore, depending upon how much planning you have done. Here are a few suggestions:

Put strings of electric lights on the tree before any other decorations are added. Lay strings of lights along floor, straighten them out and remove all kinks. Check to be sure all bulbs work and that none of the cords are frayed or sockets damaged. This done, start putting them on, one string at a time, from top of tree down and from inside of boughs out to the tips. After each string has been placed, light it and stand off to check your handiwork before making any additions.

When strings are in position, disconnect them before hanging ornaments, again working from top down. These rules also apply to decorating outdoor trees.

Too many lights on a tree can be objectionable, just as too few will give a spotty appearance. Here's a guide to follow:

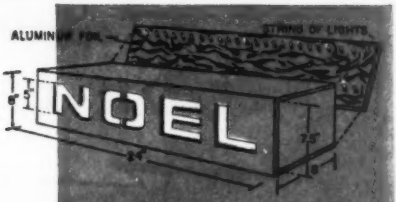
Tree height (feet)	4	5	6	7	8	10
No. of tree lights	36	56	81	110	144	225

In shopping around for new light bulbs for Christmas decorating, you'll find a wide choice. For instance, lights designed with a lively swirling pattern in several colors; globe-shaped bulbs that resemble tree ornaments when unlighted; and very small bulbs which are for indoor use only.

In planning your outdoor lighting, don't forget the practical factor of *safety*. Weatherproof light bulbs and cord sets are a "must." If you do not have weatherproof outlets permanently installed for other garden lighting, don't worry about it—they're fine but not absolutely essential. You have two other alternatives: 1) a weatherproof light cord can be plugged into a porch light or wall bracket in the entrance hall, or 2) outdoor lights may be connected through a nearby window by inserting a wood block (width of window and about 5″ high) with a hole cut in the block through which to thread the light cord.

Add floodlighting or spotlighting to the overall design, even when outdoor strings of lights are used. Without flood or spot lighting, the color and detail of a design disappear when night falls. It will make it safer, too, for your guests to find their way if there is snow or ice.

If you have the time, it's often more fun to make your own Christmas decorations. On these pages are two attractive suggestions, neither of which is difficult or time-consuming.



For this Holiday Greeting, you'll need:

2 end pieces ¼″ plywood, 7½″ x 8″
4 strips ¼″ plywood, 8″ x 24″
black or dark blue paint
heavy aluminum foil
2 strings 24 midget twinkle lights

On one strip of 8″ x 24″ plywood trace word NOEL 5″ high. Cut out. With wire brads or glue, fasten together three 24″ plywood strips and the two end pieces to form a box. Use NOEL for front. Leave one 24″ strip for back. Line top, bottom and sides of box with aluminum foil. Line back of box with crumpled foil, drill 48 small holes evenly in back to hold sockets for miniature bulbs. Paint outside; arrange sockets through holes and screw miniature bulbs in place. Hold back of box in place with small screws which can be easily removed to change bulbs.

COOK CHRISTMAS DINNER—

So many of our readers have asked us about cooking in the electronic range, we decided to tell you how it might be done on Christmas Day.

Of course, we hear most about how *fast* cooking in this type of range can be. It's all of that—a 12-pound turkey in one hour, potatoes baked in 4 minutes, most frozen vegetables in 4 to 5 minutes, 3 strips of bacon in 90 seconds, bake an apple in 90 seconds—the list is endless and the cooking time infinitesimal. But let's not overlook the fact that each dish is perfectly cooked, too.

Another advantage is that this oven-in-the-wall not only does the work of an oven but it also will do approximately 85% of all the cooking you do on top of your range. You do not use metal utensils because they would interfere with the transfer of the microwaves passing through the food and doing the cooking. Instead, you use pyrex, paper, china, and some plastics. The waves pass through these materials, as light passes through a window pane, with no harm done. What's more, when the food is removed from the oven, it is not necessary to use a hot plate holder because the only thing that is hot is the food.

Advantages add up other advantages: if there is no heat in the oven, then it stands to reason the kitchen does not get hot in summer and how nice that is!

The fact that you can cook in disposable dishes or in the dishes in which the food is to be served, means that you cut down on the number of utensils to be washed. Oven is easy to clean because there is no great spattering of grease and no baked-on foods to be removed.

This traditional Christmas dinner menu may be cooked in the electronic range and the cook would be none the worse for wear. All the preparation could be done ahead of time, then literally each dish could be popped into the oven and out!

ROAST TURKEY, WITH STUFFING

Prepare a turkey, around 12 or 14 pounds, for roasting. Stuff lightly with your favorite stuffing and cover openings with slice of bread; sew shut or fasten with skewers. Place turkey in 9″ x 15″ glass utility dish. Roast a 14-pound turkey for 1 hour and 15 minutes on high speed, turning on four sides. Allow to stand 20 to 30 minutes before carving. (*Note:* to prevent over-cooking of leg ends, wrap in foil for one-half the cooking time).

GLAZED SWEET POTATOES

4 medium sweet potatoes, peeled, cut in 1″ slices
¼ cup butter
½ cup brown sugar

Arrange in 1½ quart casserole, top with butter and brown sugar. Cover and cook 6-8 minutes or until done.

EGGPLANT CASSEROLE

1 small eggplant
¼ cup butter
1 onion
2 tomatoes
⅔ cup grated cheese
1 cup bread crumbs
½ cup finely chopped cooked ham (optional)
1 teaspoon salt
black pepper

Peel eggplant. Dice into ½″ cubes. Melt 3 tablespoons butter in 1-quart casserole and cook eggplant in butter 4 minutes, or until tender. Slice onions and tomatoes and arrange in layers with eggplant, crumbs and cheese, ending with cheese, ham and crumbs on top. Cook 4 or 5 minutes in covered dish. If additional browning is desired, place under browning unit on center shelf and brown 2-3 minutes uncovered.

ROYAL MINCEMEAT PIE

9-inch baked pie shell
2 eggs, slightly beaten
¾ cup evaporated milk
2 tblsp. molasses
¼ cup sugar
1 lb., 14 oz. can mincemeat
2 tblsp. all-purpose flour

Dust the flour evenly over the bottom and sides of the baked pie shell, making certain that the portion that will come in contact with filling is covered. Mix remaining ingredients together. Pour into the prepared pie shell. Lay wax paper over the top. Cook 2 minutes on bottom shelf.

ELECTRONICALLY . . .

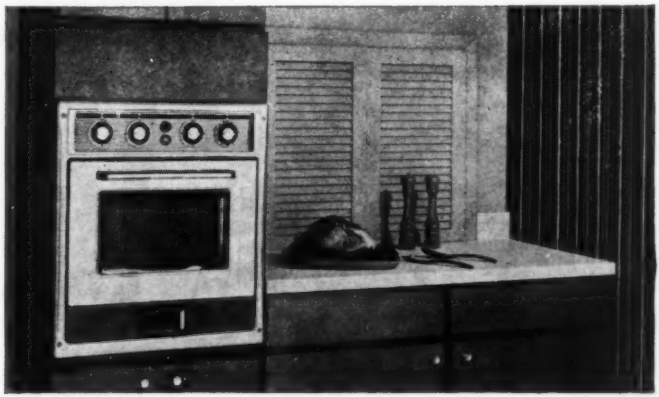
LATTICE CRUST

A lattice-top crust may be added by lacing un-baked pastry strips, cut ½-inch wide and ⅛-inch thick, over top of the pie. Seal strips to sides with evaporated milk. Brush top of strips with milk, also. (Do not use wax paper cover.) Cook with microwaves 2 minutes on center shelf position. Cook with microwave energy and brown simultaneously 3 minutes longer or until the desired color is obtained.

OLD FASHIONED POUND CAKE

1 cup butter
1⅔ cups sugar
5 eggs
2 cups sifted cake flour
2 teaspoons vanilla flavoring
1 teaspoon almond flavoring (or use 3 teaspoons vanilla)

Cream together butter and sugar until light and fluffy. (Use medium setting on electric mixer.) Add whole eggs, one at a time, beating well after each addition, but do not overbeat. Fold in sifted flour, then vanilla and almond flavorings. Bake in a pyrex loaf pan 10″ x 5″ x 3¼″, lined with waxed paper and lightly greased and floured. Bake cake in center of shelf in centered position in oven for 6 minutes on high speed. Use browning element simultaneously with microwaves for last 1½ to 2 minutes of cooking time to brown top of cake. Turn out on cake rack to cool, and remove waxed paper immediately.



Sew a Fine Seam!

9028—Scooped jumper, classic blouse. Printed Pattern in Half Sizes 12½-22½. Size 16½ jumper 1⅞ yards 54-inch fabric; blouse 2 yards 39-inch.

9275—Six-gore shirtdress with neat shoulder darts. Printed Pattern in Half Sizes 14½-24½. Size 16½ takes 3¼ yards 39-inch fabric.

9252—Adapt this shirtdress to any season by choice of fabric and sleeves. Printed Pattern in Misses' Sizes 12-20; 40. Size 16 takes 4⅝ yards 39-inch fabric.

9211—Mix-match set for daughter. Printed Pattern in Child's Sizes 2, 4, 6, 8, 10. Size 6 top and skirt 1⅛ yards 54-inch fabric; blouse 1 yard 35-inch.

9165—Half-size step-in style with tabbed collar, pockets. Printed Pattern in Sizes 14½-24½. Size 16½ takes 3⅞ yards 39-inch fabric.

9361—Still time to make gift aprons. Sew all three easy styles; trim with binding, rickrack, ruffles. Printed Pattern in Misses' Medium Size ONLY. Each takes 1 yard 35-inch fabric.

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Pattern Department, P.O. Box 122,
Old Chelsea Station, New York 11, N. Y.

ELECTRIC BLANKETS . . .

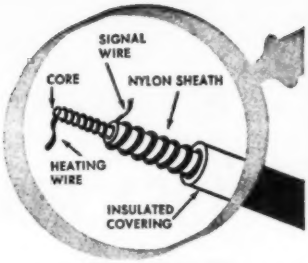
(*continued from page* 18)

insulating property. Up to a certain temperature the nylon sheath is an insulator; above this, it becomes an electrical conductor.

Here's how it works: If the inner heating wire becomes excessively warm at any point in the blanket, the nylon sheath transmits electricity to the signal wire. The signal wire carries current back to the control and trips a circuit breaker. This shuts off current to the blanket in exactly the same manner as a circuit breaker in your fuse cabinet operates. Most controls are built so that the unit must be reset manually. This enables you to find the cause of the overheating and remove it before turning it back on again.

This feature is in effect a continuous "overheating" thermostat that senses warm spots any place on the blanket. As a practical example, if a cat were to curl up on the blanket, its body could trap enough heat to activate this overheating shut-off device. If the blanket is overlapped, bunched together, or for some other reason becomes too warm, it acts the same way. Blankets that do not employ this special dual element heating wire use numerous small thermostats installed at different spots in the blanket to detect any abnormally warm areas.

The control unit on electric blankets senses room temperature. It allows you to dial the desired heat level, and will maintain this by periodically cycling the current and, in turn, heat input delivered to the blanket. As the room gets cooler, the "on" cycles become longer. For this reason, the control should be exposed to the average room atmosphere away from open windows, drafts, radiators, or other heating or cooling influences. Also, it is important not to cover the control with anything such as a pillow or a pile of clothes.



Electric blankets, like any other electric appliances, need a certain amount of common sense care. Pins should not be stuck through the blanket, because they may damage the heating wire. Blankets should never be dry-cleaned, because the chemicals used in dry cleaning may be injurious to the wire insulation. Moth balls should also be avoided, because the naphthalene fumes are injurious to the insulation on the wires. As with conventional blankets, electric blanket fabrics cannot be made 100% flameproof. Normal precautions must be exercised as far as danger of fire to bedding from cigarettes, etc. are concerned.

Before you purchase any blanket, make sure it is approved by Underwriters Laboratories (UL). The UL approval assures you that the blanket has been manufactured to meet certain minimum safety standards set by Underwriters Laboratories, Inc.

BUY THE HYDRANT THAT *DEFINITELY* WILL NOT FREEZE

Vari-Flo Model F-55—¾" size. Cam-Lock Model B-56—1" size. Bury Depth — 2, 3, 4, 5 or 6 ft., depending on frost level in your area.

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KENNETH LEE BURK

National winner Kenneth Burk is a 1961 graduate of Milton, Indiana, High School, where he studied vocational agriculture under Delbert Vaught. His parents, Mr. and Mrs. Lawrence Burk, operate a 230-acre diversified farm.

In helping to make the farm more efficient through the use of electricity, Kenneth has installed new fuse boxes and switches in rewiring the barn; extended electric wiring to the tool shed and installed switches, lights and outlets; and installed new wiring and a 100-ampere fuse box in the house. He also did most of the installation work on a new electric pump that provides the farm water supply.

Kenneth built an electric air compressor, a fan for the barn, and a portable outdoor light. His supervised farming program in vocational agriculture for 1961 included three sheep, one fattening steer, and a 50% interest with his father in 14 beef cattle, 103 swine, and 15 acres of corn. He is an outstanding leader in the FFA and has served as president, vice-president and parliamentarian of the Milton FFA chapter. His future plans include study in agriculture at Purdue University, with the aim of entering a professional agricultural occupation.

JUNIOR PARTNERS

1961 WINNERS FFA Farm Electrification Awards . . .

Kenneth Lee Burk, 18, of Centerville, Indiana, a member of the Milton High School FFA Chapter, is the winner of the Future Farmers of America national award for achievement in Farm Electrification. He was awarded the $250 first prize during the recent national FFA convention in Kansas City.

Three other Future Farmers received awards of $200 each as winners of regional awards in Farm Electrification. They are Don Nicholson, 18, Quincy, Florida; Berton E. Sands, 19, Caribou, Maine; and Len L. Anderson, 18, Pleasant Grove, Utah.

Attending FFA Convention in Kansas City, award winners are, left

DON NICHOLSON

Extending the use of electricity on his farm has been one step in the logical development of a lifetime occupation for Don Nicholson, Southern Region winner. Don owns ⅓ interest in the 300-acre home farm with his mother, Mrs. Lou Nicholson, and 14-year-old brother. He expects to purchase their interest soon and spend full time operating the farm. Don's father is deceased. Don has had most of the responsibility of operating the farm since 1957, when he entered high school and started studying vocational agriculture under Murray D. Langford.

His supervised farming program this year included 18 breeding swine and 243 pigs fattened out for market, 125 acres of corn, 10 acres of watermelons, and 1 acre in truck crops. In the three years for which he has completed records in supervised farming projects, Don has had a labor income of $7,610. He also has earned money working off the farm.

His achievements in electrification include rewiring the farm buildings, extending wiring to new locations, and installing switches, lights, and convenience outlets. He also has repaired several items of electrical equipment.

BERTON E. SANDS

North Atlantic Region winner Berton Sands was graduated last spring from the Washburn, Maine, High School, where he studied vocational agriculture under E. C. Cunningham. His parents, Mr. and Mrs. Herbert Sands, operate a 520-acre farm in partnership with Berton's uncle, with potato production their principal enterprise.

Berton has extended and installed electric lines in the home and farm shop, and has repaired or replaced several switches, electrical outlets, and motors. His major job in electrification was the construction of an 11-ft. conveyor for loading packaged potatoes for shipping. The conveyor, which saves considerable work on the farm, is of welded metal construction, using a rubber belt for moving potato sacks. It was built in the Washburn school's farm shop. Materials alone cost more than $200.

With limited opportunities at home for establishment in farming, Berton has been restricted in his supervised farming program to 2½ acres of land for growing certified seed potatoes. He also has two beef calves. He has been secretary and president of the Washburn FFA chapter, and currently is serving as State FFA vice-president. He plans to continue studying agriculture at the University of Maine.

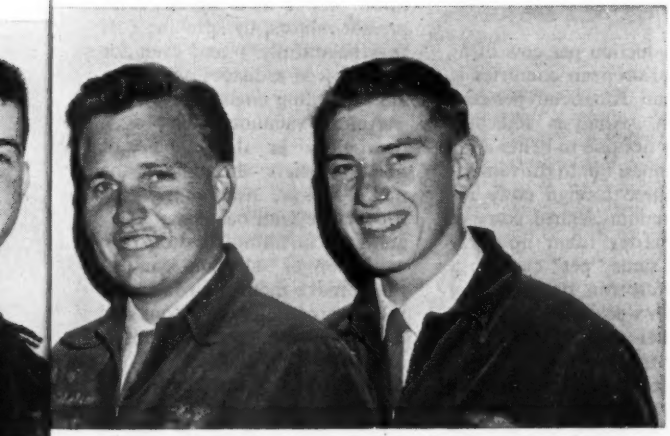
LEN L. ANDERSON

Farm electrification award winner for the Pacific region is Len Anderson, a 1961 graduate of the Pleasant Grove, Utah, High School, where he studied vocational agriculture under Willis M. Banks.

Len has a 20% interest in a farming operation with his father, Boyd Anderson, and two brothers. Dairying is their principal enterprise and most of the 200 acres of irrigated land is used for production of feed crops and pasture. They milk about 60 cows.

The father-son partners have developed a highly-mechanized system for handling feed and milking the cows. Len has put his farm mechanics training to work in helping to install much of the electrical equipment and providing regular servicing. He has also extended electric lines to two silos for operation of the automatic unloaders; installed a 3-phase line to the grain mixing shed and grain elevator, and wired the loafing shed for lights. He devised a ventilation unit to circulate air in the milk barn, and has done considerable work in electric fencing.

Len was president of the Pleasant Grove FFA chapter last year, and in 1959 was a member of the State Dairy Products judging team that won Gold Emblem in the national contest. □ □

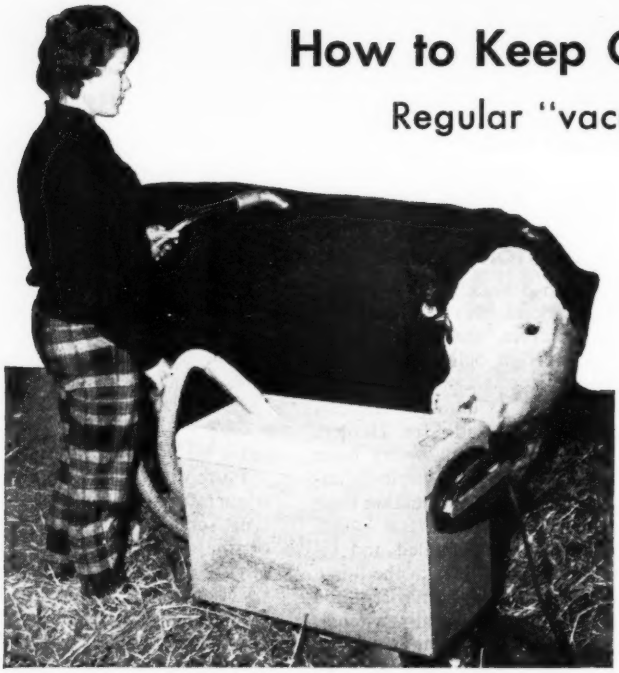


to right: K. L. Burk, B. E. Sands, D. Nicholson, and L. L. Anderson

How to Keep Cows Contented

Regular "vacuum bath" improves comfort, condition and production

By JOSEPH H. SCHREIER



Show animals look sleeker, cleaner and act better if kept comfortably clean with animal vacuum. Here, Grand Champion steer of International Livestock Show, "Herky," is given final once-over by owner Kaye Pollock of Mt. Auburn, Iowa.

"Wouldn't be without my cattle vacuum any more than I'd go back to hand milking," exclaims dairyman Edgar Schroeder, Onalaska, Wisconsin. "Five minutes per cow per week makes all the difference in the world in animal comfort and milk production."

No dairyman will argue the value of cleanliness in producing today's high-grade milk. Cleanliness not only is important to the *quality* of the milk, but also may have an effect on production. "Contented cows" give more milk than uncomfortable, distracted animals, and cleaner cows are more contented cows.

Now, advances in bacteria control, better sediment tests and greater herd production have a real ally in the electric animal vacuum cleaner, says Edgar Schroeder, Onalaska, Wisconsin dairyman. Schroeder's purebreds are vacuumed regularly, and they respond to the cleaner in such a way as to leave no doubt about its benefits.

Herdsmen have long noted that currying and brushing, tiresome as they are, pay off in increased milk and more contented animals. Now, without elbow grease, Schroeder can quickly relieve each cow in his herd of skin irritation, and actually stimulate the production of flesh and milk. Lice and other parasites are eliminated and the clean cattle are more alert and eager to do their best.

The production per cow of at least four European countries is greater than American per-cow production. Analysis indicates that this is not due to better sires and bloodlines, but to the family-pet-care these foreign cows receive. Vacuum-cleaned cows at the Schroeder farm now receive this same "pet" care on a mass-production basis! "Five minutes per week per cow makes all the difference in the world," Schroeder says.

Schroeder has also found other uses for his animal vacuum unit. He uses the machine's exhaust for blowing cobwebs, dust and dirt from barn and stanchions, for drying animals, cleaning fertilizer sower and drills, compressor motors, fly spraying ("It fogs beautifully") and even for heating iced radiators and as an aid to starting engines in winter.

Animal vacuums have proven themselves in the stables of horse fanciers throughout the nation and are also gaining wide acceptance with beef men. They are used in fitting fat stock for exhibition or sale, and can actually make more flesh faster by relieving cattle of irritations and dirt which make them miserable. As Kaye Pollock, owner of the Grand Champion Steer at the International Livestock Exhibition said: "It made Herky shine like silk!" □□

Research Notes

By J. P. SCHAENZER

Short bales of hay, 40% moisture, 18 ft. deep, in a tiered-duct mow-drying system dried successfully with natural air and compared favorably with dried chopped hay.—PENNSYLVANIA STATE UNIVERSITY, M. E. SCHROEDER AND W. L. KILGAARD.

The capacity of a vertical grain auger will be from ⅓ to ⅔ of the horizontal capacity of the same auger.—CORNELL UNIVERSITY, G. E. REHKUGLER.

Optimum flock production research indicates that the poultry laying house should be near 55° and at about a maximum relative humidity of 75%.—NEW HAMPSHIRE UNIVERSITY, JOHN J. KOLEGA.

The investment in agriculture represents $21,300 for each farm employee as compared with $15,000 for each worker in manufacturing industry.—USDA.

Experimental windowless and solar poultry houses having 3000 sq. ft. of floor area each used 9858 KWHrs and 3034 KWHrs per year respectively, or 0.11 KWHr more per dozen eggs for the windowless house.—PENNSYLVANIA STATE UNIVERSITY, J. A. STANEK AND G. O. BRESSLER.

Both young men and women average 2 inches taller than 60 years ago, with men 69½ inches and women 64½ inches tall.—INSTITUTE OF HOME ECONOMICS, USDA, M. L. HATHAWAY AND E. A. FOARD.

The average size broiler produced in New England was 3.5 lbs. in an average of 72 days; 3.2 lbs. in 66 days in Delmarva; and 3.1 lbs. in 63 days in Georgia. — UNIVERSITY OF MAINE, E. R. LITTLEFIELD AND C. H. MERCHANT.

Stability of frozen, syruped Boysenberries in retail packages was very good when held at 0° to +10° F.—WESTERN REGIONAL RESEARCH LABORATORY, ALBANY, CALIF.

Under experimental conditions it was concluded that there is no nutrient loss in corn artificially dried, or increased digestibility of the nutrients in rations containing the corn.—UNIVERSITY OF NEBRASKA, M. L. HEMSTROM.

A lighting system for poultry breeding flocks, using lamps 7 ft. above the floor and 7 ft. apart, similar to that for chicken laying flocks, will provide acceptable levels of intensity.—USDA, ARS, L. E. CAMPBELL AND L. M. LUCAS.

Satisfactory mild to medium sharp flavor cheddar cheese can be obtained by holding it at 60° for the first 4 to 6 weeks, or at 75° for 3 weeks, and then at 40° up to a total of 12 weeks.—UNIVERSITY OF KENTUCKY, T. A. FREEMAN.

The sugar content of fresh corn kernels averaged 4% by weight. From 3 to 5 days later, during shipping and sales time it was only ½ as much.—UNIVERSITY OF KENTUCKY, D. C. MARTIN AND G. B. BYERS.

Calf weaning weights by June 1, for 8 years averaged 404 lbs. from cows grazing on 12 acres each; 481 lbs. from 17 acres; 512 lbs. from cows grazing 22 acres on Southern Plains Experimental Range, Woodward, Oklahoma.

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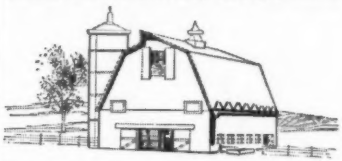

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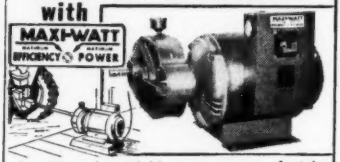

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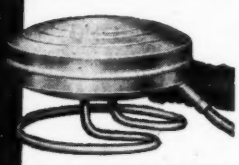

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DUFFY'S CAVERN

EVERSTOPTOTHINK?—a good YAWN is OFTEN more effective than a caustic retort . . . . Marriage is a field in which amateurs have the BEST chance of success. . . . HOME is where a man goes when he is tired of being nice to people . . . . . BARBER: The village GOSNIP. . . . OVERHEARD: "Dear, WHERE am I when you serve the meals from which I get the LEFTOVERS?". . . . A REAL old-timer can remember when Sunday drivers let off steam by shaking their buggy whips at each other. . . . Dudley Seryus says the CHIEF pleasure in using a taxi is the CAREFREE feeling you have when the fenders crumple. . . . Then there's the story of the fellow who was SO nearsighted he picked up a SNAKE to kill a STICK. . . . If most women had it to do over they'd marry the man they didn't have to do over. . . . LIMERICK DEPT.: A fellow whose first name was GEO., A company check tried to FEO.; But the firm soon found out What George was about, And compelled him at once to DISGEO. . . . ALIBI: proving you were at the prayer meeting where you WEREN'T in order to show you weren't at the card game where you WERE. . . . SODDEN THOUGHT: IF you look BACK too much, you'll SOON be heading that way. . . . Burning the candle at BOTH ends makes the DRIP twice as bad. . . . The WORST kind of SHINDIGS are those you get under the bridge table. . . . What our rocket scientists are looking for is an animal-carrying satellite with a monkey-back guarantee. (Earl Wilson). . . . Oh, for the good old days, when the panhandlers asked for a nickel for a cup of coffee—and SO did the restaurant owners. . . . Chuck Uppie says: IF you want to make a living, you HAVE to work hard; BUT if you want to get RICH, you have to attack the problem from an entirely different angle. . . . SNICKER-SNORT-OF-THE-MONTH: Jack Tar, an ex-Navy man, was telling a group of his club members about his experiences on the high seas. "And once we were shipwrecked," he exclaimed, "and a lone shark followed us for days!" "Gee," commented one of the group, "those LOAN SHARKS are EVERYWHERE!". . . . CORNIEST - JOKE - OF - THE - MONTH: "Whatever happened to your brother who married that BABY-TALKING GIRL?" "Oh, he learned to take the TWITTER WITH THE TWEET." . . . FLIP QUIP: The REAL reason MONEY is called JACK is because the QUEEN takes it. . . . (Evan Esar, Humorous English). . . . Then there is the story of the teacher who asked her class to use the word "AMPHIBIOUS" in a sentence. She received this entry: "MOST fish stories AM FIBIOUS." . . . From DUBLEIGH SARTIN: "CAPITAL PUNISHMENT has taken on a NEW meaning—THAT'S when the government sets up in business AGAINST you and THEN takes ALL your PROFITS to PAY ITS LOSSES." . . . The BEST way to FIND missing kinfolks is to GET RICH. . . . DUFFYNOTION DEPT.: A HOWLING SUCCESS is a baby who gets picked up. . . . The HONEYMOON is OVER when your BUNDLE of CHARMS becomes a BAG OF TRICKS. . . . Your pun-peddler—DUFFY

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How NOT to heat a milking parlor

(Just warm the man working there!)

By FRANK K. JOHNSON, JR.

The father-and-son combination has proved to be a successful team at the Fuller Farm in Marlborough, Connecticut. It is a significant example of an old New England family keeping up with new developments.

The Fullers' first step in modernizing their farm was to install a loose-housing setup designed to promote efficiency and economy in handling their 45 milking cows. The next move provided for the enlargement of their service entrance from 60 amps to 200 amps. Before this, short motor life, poor motor operation, dim lights and periodic blowing of fuses were experienced. The trouble—their wiring and service entrance were just too small for the load the Fullers were putting on the electrical system. Updating the system solved their problems.

Now that capacity was available, the Fullers were able to add labor-saving electrical farm choring equipment. Heating and lighting of the milking parlor required study and planning to design a system which would meet the farm's needs and still be economical to install and operate.

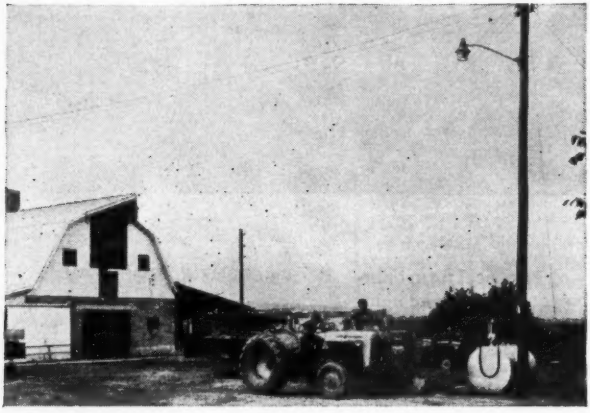
The use of 250-watt, R-40 industrial-type infrared heat lamps was found to be the best method for providing both heat and light from one source. The cost of operation was recorded on a check meter to get accurate KWHr use on the heat lamps alone. The check meter recorded the following data:

Months	Cost
Dec. 9-Jan. 11	*$9.22*
Jan. 11-Feb. 9	*8.09*
Feb. 9-March 9	*6.71*
March 9-April 9	*6.00*

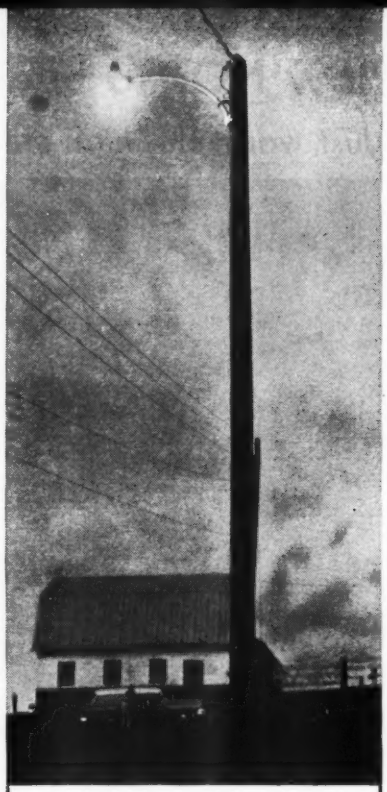
The outstanding feature of the infrared heat lamps is the bonus of light in addition to the heat. Since infrared rays heat only those surfaces which they actually strike, they do not heat the air as space heaters do. Because of this, the operator doesn't have to turn on the lamps to warm up the room before milking time. Instead, he turns on the lamps and is immediately warmed as he steps under them.

Regardless of how much cold air might sweep into the parlor in midwinter when the operator opens the door to let the cows in, his body remains comfortably warm and he is able to work with ease while standing under the lamps. The kilowatt-hour use does not increase with colder temperatures. Rather, cost is determined by the burning hours of the infrared lamps multiplied by the wattage of the bulbs.

Centrally-located 7000-lumen mercury vapor lamp lights the Franklin Teague farmstead in Guilford County, North Carolina, spreading its pattern of light from the house to the milking parlor and loafing barn. Controlled by a photo-cell, the lamp operates from dusk to dawn automatically.



Automatic all-night light is at the heart of Wilton A. Stanley's Claudville, Virginia farmstead. Around the light pole are clustered his milking parlor, barn, farm shop and residence. Jobs like fueling and servicing equipment can be safely and conveniently performed after dusk or before dawn.



Shorter days of winter mean that dairymen, those perennial early-risers, are at work way before sun-up and hours after sunset. One dairyman who finds the barnyard and pathway from house to milking barn lighted all the time is H. F. Wallace, of Hickory, North Carolina. He has a 7000-lumen mercury vapor lamp that lights the pathway with an elliptical pattern reaching up to 250 feet on either side of the fixture.

MAKE LIGHT OF CHORES AT NIGHT

Throughout the Southeast, farmers are finding they can have the same nighttime convenience as city dwellers, thanks to the availability of street-light-type and other photoelectrically-controlled lighting fixtures for farm use. Here's how some of your neighbors are using night-lighting on the farm.

Electric post lantern on the lawn of the Frank King home at Tifton, Georgia, is useful and decorative. Photoelectric cell causes it to light up when the sun goes down, switch itself off at daybreak.

WHY FEED SILAGE?

- High cost of quality hay
- Ease of mechanized feeding

Three silos are located in straight line, which expedites transfer of unloader between silos.

Cows in Clark herd get all the silage they will eat once a day. Unloader and bunk feeder deliver a ton of silage in 15 minutes.

There are two reasons that cows in the Clark & Son dairy herd at Jacksonville, Alabama, are eating silage this winter. One is the high cost of quality hay, says E. W. Clark. The other is a mechanized handling system which delivers two tons of fresh silage to the cows in 30 minutes.

"We have recognized the value of silage all along," explains Clark. "But we didn't get it into our feeding program until we had a system for handling it."

That system is three 18 x 40-ft. upright silos, a 5 hp unloader and a 100-ft. 5 hp bunk feeder. It is laid out so that the 200-ton-capacity silos are in a straight line, each unloading directly into the feed bunk. This location of the silos also simplifies the transfer of the unloader, a job that requires two men the better part of one-half day.

But this is work about which Clark makes no complaints. For once the unloader is transferred, it will cut, pulverize and deliver fresh silage at the push of a button. Hung from a tripod atop the silo, the unloader is lowered by winch.

Clark fills the silos once a year with corn silage. His intent is to feed silage from September until May, giving his 85 cows all the silage they will eat once a day. During the summer he irrigates pastures to keep ample grazing.

The cost of quality hay was one economic factor which influenced Clark to decide he could afford the investment for silos. He reasons that, with his equipment, silage is a cheap unit of feed for him to produce and handle. He invested approximately $9000 in silos and another $2400 to automate the feeding operation. □ □

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Tractor-Driven Standby Generator

12,000-watt unit is driven by tractor PTO. Treadaway expects to house it permanently in this location. Only minutes are required to put it into operation.

Once in a great while weather or some other circumstance beyond human control causes interruptions in electric service. Usually, it is a very short time until this service is restored. But in areas hit by hurricanes or severe weather, the interval has at times stretched into hours, causing inconvenience and sometimes anxiety, too.

Some farmers who have critical electrical loads are installing standby tractor-driven generators to assure that an untimely power outage will not cause them any difficulty. Dairyman Frank Treadaway of Adairsville, Georgia, is one of these. He hastens to point out that he has not used the generator except for testing, and he hopes he never will. But he counts it a cheap investment for the security it gives him.

It would be a difficult, almost impossible, task for him to find enough help to milk a hundred cows by hand, Treadaway explains. And if cows are not milked when they need to be, he says, experience has taught him that production drops off immediately and is hard to build back.

His 12,000-watt generator is driven by the power take-off on a farm tractor. It supplies enough electric power to permit the continuation of routine activities in the dairy and the residence. Treadaway says he has about $700 invested in the standby system. In addition to buying the unit, he had to adapt his entrance switch to permit use of it. What he did was have a new terminal block put in the 200-ampere disconnect switch on his central service pole and install a weatherproof receptacle for connecting the generator.

In event of emergency, all Treadaway has to do is set the generator in position, connect the shaft to the tractor PTO, insert the plug into the receptacle, throw the 200-ampere switch, and start the tractor. He cautions that the generator should be started and brought up to speed under load. □□

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